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ABSTRACT

The second phase of a three-part research and development plan, this study investigated the relationship between teacher performance on the Black English Tests for Teachers (TTBE) and specified sets of teacher behaviors and pupil achievement as measured by curriculum-specific tests in language arts. The study involved 27 teachers from two schools and their 256 black students. In addition to participating in the TTBE, teachers were evaluated on video tape according to frequency of utterances devoted to specific classroom behaviors (such as explaining and questioning) and frequency of three classroom events: error and confusion, directly relevant teaching, and indirectly relevant teaching. The students involved were pre- and posttested on the same curriculum-specific test. Results of the study indicate that in the first school there was a significant correlation between modeling in instruction and pupil achievement. In the second school, only teachers with the highest and lowest pupil achievement in their classes were evaluated on the frequency of behaviors instrument. Here, results show that the lower group of teachers ranked significantly higher in errors and confused communication as well as in teaching behavior indirectly relevant to the lesson goal. (MAI)

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THE RELATIONSHIP OF THE BLACK ENGLISH TESTS FOR TEACHERS AND SELECTED TEACHING BEHAVIORS TO PUPIL ACHIEVEMENT

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THE RELATIONSHIP OF THE BLACK ENGLISH TESTS FOR TEACHERS AND SELECTED TEACHING BEHAVIORS TO PUPIL ACHIEVEMENT

Robert L. Politzer and Shirley A. R. Lewis

1. Introduction

The research presented here forms part of a general research and development plan with three phases: (a) the development of reliable, valid tests dealing with the history and structure of Black English and knowledge of teaching methods suited to bidialectal classrooms; (b) the observation and identification of teaching skills that lead to significant improvement of Black pupils' reading ability; and (c) an "intervention" experiment designed to demonstrate that teacher effectiveness can be increased by training in the knowledge and skills validated during the first two phases. This report summarizes the most important results of the second phase and also presents some further data concerning the validation of the Black English Tests which were produced during the first phase and discussed in a previous report (Politzer and Hoover, 1977).

2. General Procedures

The research reported here was carried out in East Palo Alto, California (Ravenswood City School District) and Trenton, New Jersey (Trenton Elementary School District) during the school year 1976-77. The main purpose of the investigation was to identify teaching skills related to reading achievement of Black English-speaking pupils. The research involved the following steps, listed below in approximate chronological order (some of the steps overlapped, i.e., were taking place concurrently).

1. Identification of third- and fourth-grade teachers who were willing to take part in the experiment.
2. Development of a curriculum unit consisting of three sections and compatible with the syllabus of reading instruction planned in the participating disticts. The three sections of the curriculum unit dealt with (a) sequencing skills, (b) the distinction between the past and present tenses, and (c) the identification of the vowel digraphs, ea and ie.
3. Development of a test containing three subtests corresponding to the three sections of the curriculum unit.
4. Presentation of teacher workshops in which the experimental curriculum units was explained to participating teachers. In East Palo Alto the entire curriculum unit was used in the experiment. In Trenton, time restrictions made it necessary to exclude the first section of the planned unit from the experiment.
5. Administration of Black English Tests for Teachers to participating teachers.
6. Administration of curriculum-specific test (see 3, above) to pupils in teachers' classes. This was a pretest administration. In Trenton, only sections 2 and 3 of the test were used in a form slightly revised from the one administered in East Palo Alto.
7. Videotaping of participating teachers while teaching lessons in which the experimental curriculum unit was used. Each videotaped lesson segment was about 20 minutes in length. In East Palo Alto each teacher was videotaped four times, teaching three lessons corresponding to sections 2 and 3 of the curriculum unit.

8. Inspection of videotapes, and development of observation instruments for analysis of videotapes.
9. Administration of curriculum-specific test to classes of participating teachers. This was a posttest administration. (Note that in Trenton only sections 2 and 3 were used in a slightly revised form of the test.)
10. Establishment of adjusted posttest scores (posttest adjusted by pretest) for individual pupils and determination of relative effectiveness of teachers as measured by mean adjusted posttest scores of their pupils on individual sections and on the total test.
11. Investigation of relation of teacher scores on the Black English Tests for Teachers and observation of classroom behaviors to effectiveness of teachers (as measured in 10, above).

3. Subjects

The experiment involved thirteen (13) teachers in East Palo Alto and fourteen (14) teachers in Trenton (23 female, 4 male; 14 Black, 11 Caucasian, 2 Asian-American. Table 1 identifies each participating teacher by number code assigned for the purpose of data analysis and also shows the number of Black pupils in each teacher's class. As can be seen from the table, the total number of pupils involved in the study was 256 (116 male, 140 female; 113 in East Palo Alto, 143 in Trenton).

4. Independent Variables

a. Black English Tests for Teachers

The Black English Tests for Teachers used in this experiment consisted of two subtests: Reading Pedagogy and History and Structure of Black English. These tests have a multiple-choice format (there are three possible answers to each question). The Reading Pedagogy subtest consists primarily of items probing teacher awareness of the possible uses of Black Vernacular English in the classroom. History and Structure of Black English deals with topics such as the possible sources of Black English and the identification of linguistic or sociolinguistic features of Black English.

The reliability of the Black English Tests for Teachers had been established in previous research (Politzer and Hoover, 1977). In this experiment a version having 45 items for the History and Structure subtest (Section I) and 21 items for the Reading Pedagogy subtest (Section II) was used. In the test administration undertaken in this experiment the reliabilities (Chronbach's α) of the test and its sections were found to be as follows: total test: $\alpha = .79$, Section I: $\alpha = .70$, Section II: $\alpha = .63$. The test scores received by individual teachers are shown in Table 2. There was considerable variation in the test results with total test scores ranging from 28 to 58.

TABLE 2

Scores on Black English Tests for Teachers

Location	Teacher No.	Test Scores: Section I (45 items)	Section II (21 items)	Total test (66 items)
East Palo Alto				
	1	20	8	28
	2	36	17	53
	3	35	15	50
	4	36	17	53
	5	37	15	52
	6	34	19	53
	7	39	19	58
	8	35	18	53
	9	41	17	58
	10	37	18	55
	11	39	17	53
	12	40	19	59
	13	38	20	58
Trenton				
	14	43	17	50
	15	32	18	50
	16	40	17	57
	17	31	18	49
	18	34	16	50
	19	31	13	44
	20	31	17	48
	21	30	16	46
	22	31	13	44
	23	29	20	49
	24	36	16	52
	25	33	16	49
	26	32	12	44
	27	36	19	55

b. Classroom Observation Instrument A

In deciding which classroom behaviors should be observed, three factors were taken into consideration: (a) We wanted to look at classroom behaviors in previous investigations of the process-product type of research considered important and for which there was already some evidence of affect on educational outcomes. (b) We intended to include in our observation instrument only those behaviors that a preliminary examination revealed as being represented in our videotaped teaching performances. (c) We wanted to look at classroom behaviors in a straightforward, uncomplicated way, because the purpose of our investigation was to identify successful behaviors that could be pointed out and taught to teachers in the relatively short training sessions planned for the follow-up (third) phase of our research (the "intervention" experiment described in the Introduction).

Our search for types of behavior identified as important by previous process-product research was helped by recent bibliographical summary publications (Rosenshine and Furst, 1973; Duncan and Biddle, 1974; Good, Biddle, and Brophy, 1975). The decision to include certain of the behaviours listed below was also influenced by other recent findings and publications dealing with teaching behaviors directly related to reading achievement (e.g., Stanford Research Institute, 1976; Calfee and Hoover, 1974). A category of behaviors related to treatment of Vernacular Black English was included, not only because it seemed directly relevant to assumptions implicit in the Black English Tests for Teachers but also because there is some research evidence linking a positive, accepting attitude toward Vernacular Black English to reading achievement of Black pupils (Piestrup, 1973).

The following broad categories of behaviors emerged from our literature search and the preliminary examination of a sample of the videotapes. The name fo each category is followed by the abbreviation used to refer to the category in subsequent discussions and in the tables: Explaining (X), Questioning (Q), Correcting (Co), Evaluating (V), Recognition and Praise (R), Discipline (D), Participation (Pa), Personalization (Pe), Vernacular Black English Treatment (VB).

After further examination of a sample of the videotapes, it was decided to subdivide each of the above categories into more specific types of activities. These subcategories are listed below. Precise definitions and ezamples of the behaviors coded under each subcategory are given in Appendix A.

X = Explaining
- X1 = Gives overview
- X2 = Uses examples
- X3 = Uses visual aids
- X4 = Uses textbook
- X5 = Gives definition
- X6 = Models in instructing
- X7 = Directs in instructing

Q = Questioning
- Q1 = Asks rote question
- Q2 = Asks probing question

Co = Correcting
- Co1 = Corrects directly
- Co2 = Corrects by questioning
- Co3 = Corrects by giving desired correct response

V = Evaluating

- V1 = Checks individual
- V2 = Checks group
- V3 = Gives written exercise

R = Recognition and Praise

- R1 = Gives simple acknowledgment of satisfactory performance
- R2 = Gives elaborate positive acknowledgment
- R3 = Uses elaborate negative statement

D = Discipline

- D1 = Uses mild discipline
- D2 = Uses harsh discipline

Pa = Participation

- Pa1 = Expresses availability of help
- Pa2 = Calls for self-sufficiency
- Pa3 = Student calls out answers, asks to be called-on (represents student behavior).
- Pa4 = Calls for, or places value on group or cooperative effrot
- Pa5 = Calls for, or places value on individual or competitive effort

Pe = Personalization

- Pe1 = Makes positive personal references
- Pe2 = Makes positive familial or community references

A rather unexpected result of the examination of the entire set of videotapes was that there appear no specific teaching or pupil behaviors concerning the treatment of Vernacular Black English. Of course some Black English forms, and especially Black English pronunciations, were used by many of the pupils and several of the Black teachers, but no specific kind of behavioral reaction could be connected with their use. We can only assume that the presence of the videotape cameras in the classrooms and the knowledge that the cameras were related to a Black English research project had the result of preventing any kind of overt reaction to Black English speech.

For the purpose of quantifying the behaviors to be studied in our observation, we used a method that combined noting the incidence of a behavior with a measure of the relative amount of time spent on it. We counted the number of complete utterances devoted to a particular behavior. Thus, a statement like: "Who know what 'active' means? I mean, can you tell me what an active verb is?" was coded as three distinct utterances of behavior Q2 (Asks probing question). The basic unit of analysis was therefore an utterance and the basic statistic used as independent variable was the frequency with which utterances related to a particular behavior category appeared during a twenty-minute period. If the videotaped lesson did not take exactly twenty minutes, frequencies were prorated for a twenty-minute interval according to the formula:

Observed frequency/observed time = x/ twenty minutes

Interobserver reliability for the observation of behaviors was determined in the following manner. Four observers were trained as a team to use the observation instrument. Where disagreements existed, observers discussed their differences until mutual agreement was reached. Once rater agreement on behaviors seemed to be established, observers coded behaviors in pairs.

A sample of five pairs of coded observations, each covering a twenty-minute period, was then drawn. For each pair of observations, inter-observer agreemetn was first established for individual minutes: for each minute a score of 1 was given if both observers listed identical frequencies. A minute in which one rater posted zero frequencies while the other scored a frequency of one or more recieved a score of 0.

Minutes in which both observers posted different frequencies received a score obtained by dividing the higher frequency into the lower. The agreement for a twenty-minute period was then calculated by averaging agreement scores assigned to individual minutes. The total agreement score for any behavior represents, in turn, the average of the agreement scores assigned to each five twenty-minute periods included in the sample. These total agreement scores--ranging from 100% to a low of 63%--are shown in Table 3.

TABLE 3

Interobserver Agreement for Observed Behaviors
(Observation Instrument A)

Behavior	Agreement Score	Behavior	Agreement Score	Behavior	Agreement Score	Behavior	Agreement Score
X1	67%	Q1	64%	V3	100%	Pa2	100%
X2	87%	Q2	93%	R1	63%	Pa3	94%
X3	70%	Co1	98%	R2	90%	Pa4	97%
X4	99%	Co2	73%	R3	99%	Pa5	99%
X5	97%	Co3	98%	D1	97%	Pe1	97%
X6	95%	V1	95%	D2	100%	Pe2	99%
X7	77%	V2	96%	Pa1	100%		

The frequencies of classroom behaviors observed in the classes of individual teachers in East Palo Alto (teachers 1-13) and in Trenton (teachers 14-27) are shown in Tables 4A and B. Frequencies are shown in terms of totals for all observations as well as for each individual lesson (4 in East Palo Alto, 2 in Trenton). The table indicates, as might be expected, that Explaining (especially X1, Gives overview, or X7, Directs in instructing), and Questioning (especially Q1, Asks rote question) appear to be the most frequently observed behaviors. Some behaviors like Makes positive familial or community references (Pe2) are, of course, rather sporadic.

Table 4A

Frequency of Classroom Behaviors Observed by Instrument A:
Explaining (X), Questioning (Q), Correcting (Co), Evaluating (V)

Teacher No.	Lesson	Behavior X1	X2	X3	X4	X5	X6	X7	Q1	Q2	Co1	Co2	Co3	V1	V2	V3
East Palo Alto	1	37.50	0	0	0	1.25	0	20.00	71.25	0	0	1.25	6.25	1.25	5.00	3.75
1	2	1.05	5.26	67.37	0	0	4.21	76.84	12.63	0	1.05	4.21	4.21	0	21.05	0
	3	28.89	6.67	7.78	0	0	0	32.22	53.33	0	0	12.22	0	1.11	0	0
	4	15.29	0	0	0	5.88	10.59	197.65	2.35	0	4.71	1.82	8.24	2.35	20.00	0
	Total	82.74	11.93	75.15	0	7.13	14.80	326.71	139.57	0	5.70	18.36	18.70	4.71	46.05	3.75
2	1	54.44	0	0	0	0	0	47.78	16.67	3.33	4.44	0	0	2.22	5.56	0
	2	22.11	0	2.11	0	1.05	0	56.84	34.74	11.58	1.05	6.32	0	0	3.16	0
	3	81.00	0	4.00	0	3.00	0	46.00	19.00	0	1.00	2.00	1.00	0	2.00	0
	4	57.00	0	11.00	0	2.00	0	45.00	6.00	2.00	2.00	0	0	0	9.00	0
	Total	214.55	0	17.11	0	6.05	0	195.62	76.40	16.91	8.50	8.32	1.00	2.22	19.71	0
3	1	34.34	0	4.44	0	4.44	0	16.67	35.56	3.33	2.22	4.44	1.11	2.22	14.44	1.11
	2	111.11	2.22	15.56	0	0	0	2.22	26.67	20.00	0	2.22	0	6.67	0	0
	3	88.42	0	0	0	4.21	0	49.47	53.58	0	3.16	11.58	3.16	0	20.00	0
	4	84.44	0	12.22	0	0	0	53.33	22.22	0	1.11	8.89	1.11	1.11	8.89	0
	Total	318.42	2.22	32.22	0	8.65	0	121.70	138.13	23.33	6.49	27.13	5.38	10.00	43.33	1.11
4	1	7.00	0	9.00	0	0	2.00	63.00	26.00	0	1.00	1.00	1.00	3.00	19.00	0
	2	21.00	0	2.00	0	2.00	9.00	130.00	14.00	2.00	2.00	4.00	4.00	0	1.00	0
	3	4.00	0	16.00	0	0	31.00	90.00	37.00	0	5.00	3.00	0	0	0	0
	4	41.00	0	16.00	0	0	2.00	75.00	9.00	1.00	0	0	0	0	5.00	1.00
	Total	73.00	0	43.00	0	2.00	44.00	358.00	86.00	3.00	8.00	8.00	5.00	3.00	25.00	1.00
5	1	56.00	0	0	0	0	0	40.00	10.67	13.33	0	0	48.00	4.00	0	0
	2	29.41	0	4.71	0	4.71	4.71	58.82	16.47	0	3.53	4.71	0	0	3.53	0
	3	48.00	0	15.00	0	0	1.00	53.00	11.00	3.00	0	1.00	4.00	1.00	0	0
	4	32.00	0	3.00	5.0	0	0	52.00	25.00	0	2.00	3.00	1.00	0	0	0
	Total	165.41	0	22.71	5.0	4.71	5.71	203.82	63.14	16.33	5.53	8.71	53.00	5.00	3.53	0
6	1	52.22	7.78	2.22	0	0	2.22	44.44	66.67	4.44	0	12.22	0	0	2.22	1.11
	2	38.95	3.16	3.16	0	2.11	0	23.16	38.95	0	2.11	1.05	1.05	2.11	3.16	0
	3	50.00	3.00	5.00	0	0	2.00	50.00	13.00	2.00	6.00	6.00	1.00	0	1.00	1.00
	4	57.00	0	4.00	0	0	0	97.00	9.00	3.00	4.00	2.00	1.00	0	1.00	1.00
	Total	198.17	13.94	14.38	0	2.11	4.22	214.60	127.61	9.44	12.11	21.27	3.05	2.11	7.38	3.11

TABLE 4A, (continued)

Frequency of Classroom Behaviors Observed by Instrument A:
Explaining (X), Questioning (Q), Correcting (Co), Evaluating (V)

Teacher No.	Lesson	Behavior X1	X2	X3	X4	X5	X6	X7	Q1	Q2	Co1	Co2	Co3	V1	V2	V3
East Palo Alto 7	1	24.29	0	4.29	0	0	0	25.71	31.43	12.86	1.43	4.29	4.29	17.14	8.57	0
	2	21.00	0	0	0	2.00	0	72.00	23.00	1.00	6.00	4.00	0	14.00	0	0
	3	15.00	0	5.00	0	0	0	73.00	10.00	1.00	3.00	1.00	0	0	1.00	0
	4	13.68	0	0	0	0	0	86.32	10.53	0	2.11	2.11	0	5.26	0	0
	Total	73.97	0	9.29	0	2.00	0	257.03	74.95	14.86	12.53	11.39	4.29	36.41	9.57	0
8	1	14.74	0	2.11	0	1.05	0	52.63	65.26	3.16	2.11	12.63	3.16	105.00	3.42	1.05
	2	31.76	0	5.88	0	4.71	0	64.71	54.12	4.71	7.06	17.65	5.88	235.00	7.06	0
	3	8.75	0	15.00	0	7.50	43.75	52.00	11.25	93.75	15.00	17.50	0	0	10.00	0
	4	6.32	0	22.11	0	2.11	0	49.47	50.53	3.16	0	21.05	0	0	10.53	0
	Total	61.57	0	45.69	0	15.36	43.75	221.81	181.16	104.77	24.16	68.83	9.04	341.00	36.01	1.05
9	1	23.16	0	1.05	0	0	8.42	45.26	21.05	1.05	4.21	12.63	0	13.68	7.37	1.05
	2	26.67	1.11	15.56	0	0	5.56	32.22	41.11	13.33	3.33	4.44	0	0	0	0
	3	16.67	0	7.78	0	14.44	2.22	53.33	32.22	7.78	0	12.22	1.11	0	6.67	0
	4	29.41	0	7.06	0	5.88	0	52.94	50.59	2.35	0	14.12	0	3.53	1.18	0
	Total	95.90	1.11	31.44	0	20.33	16.20	183.76	144.97	24.52	7.54	43.42	1.11	17.21	15.21	1.05
10	1	36.00	0	0	0	3.00	0	44.00	24.00	2.00	7.00	11.00	2.00	2.00	5.00	0
	2	21.00	2.00	0	0	4.00	0	83.00	20.00	0	3.00	5.00	0	12.00	5.00	0
	3	6.00	8.00	7.00	2.00	6.00	0	55.00	28.00	18.00	0	20.00	2.00	0	12.00	0
	4	30.00	0	0	0	0	0	68.00	15.00	11.00	1.00	11.00	0	4.00	5.00	0
	Total	93.00	10.00	7.00	2.00	13.00	0	250.00	87.00	31.00	11.00	47.00	4.00	18.00	27.00	0
11	1	38.33	0	0	0	0	0	65.00	36.67	6.67	1.67	1.67	0	0	6.67	0
	2	48.89	8.89	8.89	0	10.00	2.22	16.67	44.44	1.11	0	5.56	2.22	1.11	6.67	0
	3	51.11	11.11	10.00	0	10.00	2.22	18.89	45.56	1.11	4.44	16.67	1.11	1.11	1.11	0
	4	114.44	15.56	6.67	0	0	0	65.56	14.44	0	2.22	0	0	0	3.33	0
	Total	252.70	35.56	25.56	0	20.00	4.44	166.11	141.11	8.89	8.32	23.89	3.32	2.22	17.78	0
12	1	20.00	1.11	3.33	0	0	0	66.67	24.44	14.44	10.00	7.78	0	0	0	0
	2	15.29	0	3.53	0	1.18	0	85.88	10.59	0	4.71	9.41	3.53	7.06	1.18	1.18
	3	17.14	10.00	8.57	0	0	1.43	68.57	41.43	14.29	7.14	8.57	2.86	4.29	2.86	0
	4	32.00	0	0	0	0	0	96.00	8.00	0	11.00	8.00	0	3.00	4.00	0
	Total	84.44	11.11	15.00	0	1.18	1.43	317.12	84.46	28.73	32.85	33.78	6.39	14.34	8.03	1.18
13	1	3.33	0	3.33	0	0	0	42.22	27.78	0	2.22	2.22	0	1.11	6.69	3.33
	2	29.69	0	0	0	0	1.54	46.15	47.69	0	6.15	4.62	3.08	0	1.54	0
	3	17.00	0	3.00	0	0	5.00	66.00	13.00	0	0	3.00	0	1.00	0	1.00
	4	17.65	0	2.35	0	0	0	88.24	18.82	0	1.18	4.71	0	0	0	0
	Total	65.67	0	8.69	0	0	5.64	242.61	107.29	0	9.55	14.54	3.08	2.11	8.21	4.33

TABLE 4A, (continued)

Frequency of Classroom Behaviors Observed by Instrument A:
Explaining (X), Questioning (Q), Correcting (Co), Evaluating (V)

Teacher No.	Lesson	Behavior X1	X2	X3	X4	X5	X6	X7	Q1	Q2	Co1	Co2	Co3	V1	V2	V3
Trenton	1	46.32	0	0	0	2.11	0	73.68	21.05	0	4.21	10.53	0	10.53	1.05	0
14	2	30.53	0	1.05	0	0	0	67.37	49.47	0	1.05	8.42	0	0	0	0
	Total	76.84	0	1.05	0	2.11	0	141.05	60.53	0	5.26	18.95	0	10.53	1.05	0
15	1	21.00	0	9.00	0	0	0	126.00	47.00	6.00	0	8.00	0	2.00	11.00	0
	2	8.00	0	45.00	0	0	0	79.00	12.00	1.00	6.00	10.00	0	6.00	2.00	0
	Total	29.00	0	54.00	0	0	0	205.00	59.00	7.00	6.00	18.00	0	8.00	13.00	0
16	1	48.75	1.25	11.25	0	0	0	46.25	61.25	16.25	0	12.50	0	1.25	1.25	0
	2	33.33	4.44	0	0	0	0	114.44	16.67	3.33	2.22	6.67	0	3.33	0	3.33
	Total	82.08	5.69	11.25	0	0	0	160.69	77.92	19.58	2.22	19.17	0	4.58	1.25	3.33
17	1	28.42	12.63	12.63	2.11	2.11	2.11	34.74	0	0	1.05	3.16	0	0	0	0
	2	25.00	71.67	51.67	0	8.33	0	10.00	38.33	5.00	0	0	10.00	0	0	0
	Total	53.42	84.30	64.30	2.11	10.44	2.11	44.74	38.33	5.00	1.05	3.16	10.00	0	0	0
18	1	68.75	0	6.25	0	5.00	0	90.00	67.50	1.25	0	1.25	0	0	1.25	1.25
	2	35.79	0	1.05	0	0	0	73.68	75.79	0	0	3.16	0	5.26	1.05	0
	Total	104.54	0	7.30	0	5.00	0	163.68	143.29	1.25	0	4.41	0	5.26	2.30	1.25
19	1	4.00	1.00	3.00	0	1.00	0	129.00	49.00	0	9.00	9.00	0	0	0	0
	2	23.16	7.37	0	0	0	15.79	113.68	36.84	3.16	24.21	21.05	0	2.11	1.05	0
	Total	27.16	8.37	3.00	0	1.00	15.79	242.68	85.84	3.16	33.21	30.05	0	2.11	1.05	0
20	1	18.00	4.00	7.00	0	1.00	0	87.00	22.00	0	8.00	4.00	0	0	0	0
	2	37.00	0	0	0	0	0	72.00	39.00	0	0	1.00	0	0	13.00	0
	Total	55.00	4.00	7.00	0	1.00	0	159.00	61.00	0	8.00	5.00	0	0	13.00	0
21	1	23.16	1.05	10.53	0	1.05	6.32	57.89	50.53	4.21	0	6.32	0	0	3.16	0
	2	12.22	0	0	0	0	0	57.78	72.22	0	0	7.78	0	0	0	0
	Total	35.38	1.05	10.53	0	1.05	6.32	115.67	112.75	4.21	0	14.09	0	0	3.16	0
22	1	12.94	18.82	17.65	0	4.71	2.35	74.12	17.65	7.06	2.35	8.24	0	7.06	14.12	0
	2	26.32	5.26	1.05	0	2.11	0	144.21	6.32	0	3.16	3.16	1.05	0	6.32	0
	Total	39.26	24.09	18.70	0	6.81	2.35	218.33	23.96	7.06	5.51	11.39	1.05	7.06	20.43	0
23	1	18.00	1.00	2.00	0	1.00	0	161.00	34.00	4.00	2.00	0	0	1.00	1.00	0
	2	28.42	23.16	11.58	0	1.05	0	73.68	33.66	3.16	0	12.63	0	0	8.42	0
	Total	46.42	24.16	13.58	0	2.05	0	234.68	67.68	7.16	2.00	12.63	0	1.00	9.42	0

TABLE 4A, (continued)
Frequency of Classroom Behaviors Observed by Instrument A:
Explaining (X), Questioning, (Q), Correcting (Co), Evaluating (V)

Teacher No.	Lesson	Behavior X1	X2	X3	X4	X5	X6	X7	Q1	Q2	Co1	Co2	Co3	V1	V2	V3
Trenton	1	81.18	1.18	15.29	0	2.35	0	89.41	9.41	2.35	4.71	2.35	0	0	1.18	0
24	2	54.74	0	4.21	0	0	0	56.84	30.53	0	0	8.42	2.11	0	0	0
	Total	135.91	1.18	19.50	0	2.35	0	146.25	39.94	3.25	4.71	10.77	2.11	0	1.18	0
25	1	28.89	24.44	21.11	2.22	1.11	0	27.78	47.78	8.89	0	8.89	0	0	6.67	0
	2	66.00	27.00	17.00	0	0	0	82.00	13.00	2.00	3.00	31.00	0	0	16.00	0
	Total	94.89	51.44	38.11	2.22	1.11	0	109.78	109.78	10.89	3.00	39.89	0	0	22.67	0
26	1	27.69	0	0	0	3.08	3.08	89.23	23.08	7.69	3.08	13.85	1.54	0	0	0
	2	84.21	1.05	12.63	0	1.05	32.63	82.11	28.42	0	4.21	20.00	0	2.11	16.84	0
	Total	111.90	1.05	12.63	0	4.13	35.71	171.34	51.50	7.69	7.29	33.85	1.54	2.11	16.84	0
27	1	31.00	1.00	4.00	0	2.00	0	147.00	33.00	8.00	7.00	11.00	0	0	1.00	0
	2	65.56	0	11.11	3.33	0	0	67.78	94.44	0	0	14.44	1.11	0	0	0
	Total	96.56	1.00	15.11	3.33	2.00	0	214.78	127.44	8.00	7.00	25.44	1.11	0	1.00	0

TABLE 4B

Frequency of Classroom Behaviors Observed by Instrument A:
Recognition and Praise (R), Discipline (D), Participation (Pa), Personalization (Pe)

Teacher No.	Lesson	Behavior R1	R2	R3	D1	D2	Pa1	Pa2	Pa3	Pa4	Pa5	Pe1	Pe2
East Palo Alto	1	33.75	2.50	1.25	13.75	0	1.25	0	7.50	0	0	0	0
J	2	17.89	0	0	4.21	1.05	0	0	2.11	13.68	0	0	0
	3	26.67	0	0	14.44	2.22	0	2.22	41.11	24.44	0	0	0
	4	43.53	0	0	10.59	9.41	0	0	1.18	0	0	0	0
	Total	121.84	2.50	1.25	42.99	12.69	1.25	2.22	51.89	38.13	0	0	0
2	1	28.89	3.33	0	1.11	0	1.11	0	2.22	1.11	0	0	0
	2	51.58	0	0	0	0	1.05	0	4.21	7.37	0	0	0
	3	29.00	2.00	0	0	0	0	0	2.00	2.00	0	9.00	0
	4	28.00	0	0	0	0	2.00	0	1.00	0	0	0	0
	Total	347.47	5.33	0	1.11	0	4.16	0	9.43	10.48	0	9.00	0
3	1	23.33	1.11	0	0	0	0	0	0	2.22	0	1.11	0
	2	64.44	2.22	0	0	0	2.22	0	53.33	8.89	0	6.67	0
	3	38.95	0	0	3.16	0	0	0	8.42	6.32	0	2.11	0
	4	43.33	0	0	1.11	0	0	0	0	0	0	0	0
	Total	170.06	3.33	0	4.27	0	2.22	0	61.75	17.43	0	9.88	0
4	1	31.00	0	0	0	0	0	0	0	1.00	0	0	0
	2	2.00	0	4.00	1.00	0	0	0	2.00	1.00	0	1.00	0
	3	56.00	0	0	0	0	0	0	0	0	0	0	0
	4	22.00	0	0	0	0	6.00	0	3.00	1.00	0	0	0
	Total	111.00	0	4.00	1.00	0	6.00	0	5.00	3.00	0	1.00	0
5	1	16.00	2.67	0	8.00	1.33	0	0	4.00	2.67	0	5.33	0
	2	31.76	1.18	0	5.88	0	0	0	4.71	0	0	5.88	0
	3	20.00	0	0	6.00	0	4.00	0	6.00	5.00	0	0	0
	4	23.00	0	0	3.00	0	8.00	0	2.00	1.00	0	0	0
	Total	90.76	3.84	0	22.88	1.33	12.00	0	16.71	8.67	0	11.22	0
6	1	54.44	0	0	4.44	0	0	1.11	11.11	3.33	0	0	0
	2	35.79	0	0	0	0	0	2.11	8.42	0	0	1.05	0
	3	28.00	0	0	0	0	1.00	0	16.00	0	0	1.00	0
	4	53.00	0	0	1.00	0	0	0	5.00	0	0	0	0
	Total	171.23	0	0	5.44	0	1.00	3.22	40.53	3.33	0	2.05	0

TABLE 4B, (continued)

Frequency of Classroom Behaviors Observed by Instrument A:
Recognition and Praise (R), Discipline (D), Participation (Pa), Personalization (Pe)

Teacher No.	Lesson	Behavior R1	R2	R3	D1	D2	Pa1	Pa2	Pa3	Pa4	Pa5	Pe1	Pe2
East Palo Alto	1	27.14	0	0	4.29	0	0	0	10.00	1.43	0	1.43	0
7	2	37.00	0	0	0	0	0	0	4.00	3.00	0	0	0
	3	16.00	0	0	0	0	0	0	1.00	22.00	0	0	0
	4	16.84	0	0	9.47	0	11.58	0	1.05	7.37	0	0	0
	Total	96.98	0	0	13.76	0	11.58	0	16.05	33.80	0	1.43	0
8	1	35.79	2.11	0	2.11	0	8.42	0	1.05	6.32	0	0	0
	2	45.88	12.94	0	7.06	3.53	0	0	16.47	7.06	0	4.71	0
	3	0	5.00	1.25	8.75	2.50	0	0	32.50	22.50	2.50	0	0
	4	30.53	0	2.11	11.58	0	0	0	36.84	0	1.05	1.05	0
	Total	112.20	20.05	3.36	29.49	6.03	8.42	0	86.87	35.87	3.55	5.76	0
9	1	37.89	9.47	0	1.05	0	7.37	1.05	11.58	1.37	0	4.21	0
	2	36.67	0	2.22	3.33	0	0	0	5.56	2.22	0	0	0
	3	24.44	2.22	5.56	4.44	0	0	0	8.89	4.44	4.44	0	0
	4	36.47	1.18	0	10.59	1.18	1.18	1.18	35.29	1.18	0	0	0
	Total	135.48	12.87	7.78	19.42	1.18	8.54	2.23	61.32	15.21	4.44	4.21	0
10	1	29.00	1.00	0	1.00	0	0	0	2.00	3.00	0	0	0
	2	1.00	0	0	0	0	0	0	7.00	1.00	0	0	0
	3	30.60	0	0	0	0	0	0	11.00	2.00	0	0	0
	4	48.00	0	0	0	0	0	0	3.00	0	0	0	0
	Total	108.00	1.00	0	1.00	0	0	0	23.00	6.00	0	0	0
11	1	43.33	0	0	6.67	0	0	0	1.67	3.33	3.33	0	0
	2	24.44	0	0	5.56	0	0	0	13.33	2.22	0	1.11	2.22
	3	25.56	1.11	0	5.56	0	0	0	14.44	13.33	0	0	2.22
	4	28.89	0	0	1.11	0	0	0	4.44	1.11	0	0	0
	Total	122.22	1.11	0	18.89	0	0	0	37.89	20.00	3.33	1.67	4.44
12	1	18.89	2.22	0	0	0	23.33	12.22	65.56	12.22	0	0	0
	2	43.53	2.35	0	2.35	0	0	0	2.35	0	0	0	0
	3	40.00	7.14	2.86	8.57	0	0	11.43	101.43	11.43	1.43	4.29	1.43
	4	38.00	0	0	0	0	0	0	0	0	0	0	0
	Total	140.42	11.72	2.86	10.92	0	23.33	23.65	169.34	23.65	1.48	4.29	1.43
13	1	26.67	0	0	5.56	0	2.22	2.22	4.44	4.44	3.33	0	0
	2	9.23	4.62	0	10.77	0	0	0	30.77	0	0	3.08	0
	3	46.00	1.00	0	13.00	1.00	0	0	25.00	0	8.00	0	0
	4	23.53	0	0	2.35	0	0	0	30.59	5.88	0	0	0
	Total	105.43	5.62	0	31.68	1.00	2.22	2.22	90.80	10.33	11.33	3.08	0

TABLE 4B, (continued)

Frequency of Classroom Behaviors Observed by Instrument A:
Recognition and Praise (R), Discipline (D), Participation (Pa), Personalization (Pe)

		Behavior											
Teacher No.	Lesson	R1	R2	R3	D1	D2	Pa1	Pa2	Pa3	Pa4	Pa5	Pe1	Pe2
Trenton 14	1	30.53	0	0	0	0	0	0	0	0	0	0	0
	2	23.16	1.05	0	0	0	0	0	0	0	0	0	0
	Total	53.68	1.05	0	0	0	0	0	0	0	0	0	0
15	1	19.00	3.00	0	0	0	0	0	0	0	0	0	0
	2	12.00	2.00	0	0	0	0	0	2.00	0	0	0	0
	Total	31.00	5.00	0	0	0	0	0	2.00	0	0	0	0
16	1	32.50	0	0	2.50	0	15.00	0	0	0	0	0	0
	2	44.44	0	0	0	0	0	0	0	0	0	0	0
	Total	76.94	0	0	2.50	0	15.00	0	0	0	0	0	0
17	1	8.42	0	0	0	0	0	0	0	0	0	0	0
	2	18.33	0	0	0	0	0	0	0	15.00	0	0	0
	Total	26.75	0	0	0	0	0	0	0	15.00	0	0	0
18	1	55.00	7.50	0	0	0	0	0	0	3.75	0	0	0
	2	20.00	1.05	0	1.05	0	0	0	0	6.32	0	4.21	0
	Total	75.00	8.55	0	1.05	0	0	0	0	10.07	0	4.21	0
19	1	116.00	1.00	0	0	0	0	0	0	0	0	0	0
	2	103.16	1.05	0	2.11	0	0	0	0	0	0	0	0
	Total	219.16	2.05	0	2.11	0	0	0	0	0	0	0	0
20	1	40.00	0	0	0	0	0	0	0	0	0	0	0
	2	36.00	0	0	0	0	0	0	0	0	0	0	0
	Total	76.00	0	0	0	0	0	0	0	0	0	0	0
21	1	24.21	2.11	0	1.05	0	0	0	4.21	1.05	0	0	0
	2	23.33	0	0	5.56	0	0	0	17.78	1.11	0	0	0
	Total	47.54	2.11	0	6.61	0	0	0	21.99	2.16	0	0	0
22	1	30.59	0	1.18	1.18	0	0	0	7.06	4.71	0	0	0
	2	43.16	0	0	0	0	0	0	1.05	0	0	0	0
	Total	73.75	0	1.18	1.18	0	0	0	8.11	4.71	0	0	0
23	1	60.00	4.00	0	0	0	0	0	1.00	0	0	0	0
	2	15.79	0	8.42	0	7.37	0	0	6.32	0	0	1.05	0
	Total	75.79	4.00	8.42	0	7.37	0	0	7.32	0	0	1.05	0

TABLE 4B, (continued)

Frequency of Classroom Behaviors Observed by Instrument A:
Recognition and Praise (R), Discipline (D), Participation (Pa), Personalization (Pe)

Teacher No.	Lesson	Behavior R1	R2	R3	D1	D2	Pa1	Pa2	Pa3	Pa4	Pa5	Pe1	Pe2
Trenton	1	32.94	1.18	0	0	0	0	0	0	0	0	0	0
24	2	16.84	9.47	0	0	0	0	0	1.05	0	0	0	0
	Total	49.78	10.65	0	0	0	0	0	1.05	0	0	0	0
25	1	34.44	0	0	1.11	0	0	0	30.00	2.22	0	5.56	0
	2	69.00	0	0	1.00	0	0	0	2.00	0	0	1.00	0
	Total	103.44	0	0	2.11	0	0	0	32.00	2.22	0	6.56	0
26	1	47.69	0	0	0	0	0	0	0	0	0	0	0
	2	35.79	0	0	2.11	0	0	0	14.74	0	0	0	0
	Total	83.48	0	0	2.11	0	0	0	14.74	0	0	0	0
27	1	61.00	1.00	0	0	0	0	0	0	0	0	0	0
	2	48.89	1.11	0	0	0	0	0	2.22	0	0	0	0
	Total	109.89	2.11	0	0	0	0	0	2.22	0	0	0	0

c. Classroom Observation Instrument B

Classroom Observation Instrument B was developed after preliminary analysis revealed that the observations based on Instrument A would not lead to the identification of a large and useful set of behaviors distinguishing more successful from less successful teachers (see Section 6b below). While viewing the videotapes for the purpose of recording observations based on Instrument A, the investigators became convinced that some relatively obvious qualitative differences in teaching performance were not captured by the categories specified in Instrument A. Instrument B was designed to reveal these qualitative differences.

Instrument B was used only to analyze teaching performance in the two lessons shared by the East Palo Alto and Trenton teachers (vowel digraph, and past/present tense distinction). Three types of behavior were recorded by the instrument: (a) errors and/or confusion in the presentation of materials; (b) teaching acts only indirectly related to the goal of the lesson; and (c) teaching acts directly realted to the goal of the lesson. (For a full description and examples of the three types of behavior, see Appendix B).

For the purpose of quantifying the qualitative observations made through Instrument B, a time interval recording system was used. Observers recorded at twenty-second intervals if any of the three activities specified by the instrument was taking place. Observer agreement was calculated by a method similar to the one used for Observation Instrument A. A sample of ten periods of twenty minutes each observed by two different observers was used to establish a percentage of interobserver agreement For each twenty-minute period the higher frequency was divided into the

lower frequency to arrive at an index of interobserver agreement for that particular period. The overall reliability of the observation was calculated by averaging the reliabilities obtsined for the ten periods. The percentage of agreement figures arrived at for the three categories were 89 percent for Error and confusion; 92 percent for Directly related teaching acts and 94 percent for Indirectly related teaching acts.

5. Dependent Variables

The dependent variables used in the experiment were criterion tests specific to the curriculum taught during the experiment. The tests were developed on the basis of the district curriculum guide produced by a committee of teachers and reading specialists in the Ravenswood City School District of East Palo Alto, California. The tests were reviewed by a panel of teachers and a reading specialist in the Ravenswood district who found the tests to be representative of the work being taught in their district.

In Trenton the section on sequencing skills was omitted, but the two remaining sections were revised and expanded. These revised tests were reviewed by a group of Trenton teachers, who found them to conform with the current curriculum and testing format (for samples of these tests, see Appendix C).

The means, standard deviations, and reliabilities of both the entire test and tis sections obtained at the pre- and posttest administration are shown in Table 5. The table reveals that the posttest reliability of the overall tests was satisfactory (Cronbach's $\alpha = .90$ and .86) and that even

the subtests seemed reasonable reliable. Gains made from the pre- to the posttest were relatively low, especially in Trenton wher the pre- and posttest scores on the Lesson II (digraphs) test are virtually identical.

To assess teaching effectiveness of individual teachers, pupils' individual posttests were adjusted by the pretest scores, and adjusted mean posttest scores for individual classes were calculated. The regressions of posttest over pretest scores that served as the basis of the adjustment of posttest scores are shown in Table 6.

The mean adjusted posttest scores that represent the dependent variables used in this study are shown in Table 7. While there was relatively little overall gain from the pre- to the posttest, the mean adjusted posttest scores show considerable variation. In Ravenswood the class means of adjusted posttest scores for the total test range from 26.41 to 41.79. In Trenton the corresponding range is somewhat narrower; from 35.33 to 42.89.

TABLE 5

Means, Standard Deviations, and Reliabilities for Curriculum-Specific Tests: Pre- and Posttest Administrations

Location and Test	Pretest Mean	SD	Cronbach α	Posttest Mean	SD	Cronbach α
East Palo Alto (Pupil N=113)						
Lesson I (sequencing)	7.59	2.29	.49	10.41	2.61	.68
Lesson II (verbs)	8.65	4.15	.80	11.70	3.99	.77
Lesson III (digraphs)	11.70	3.57	.86	12.11	3.58	.88
Total Test	27.94	7.9	.87	34.2	8.6	.90
Trenton (Pupil N-143)						
Lesson I (verbs)	18.20	4.03	.74	20.02	4.25	.80
Lesson II (digraphs)	18.52	2.31	.79	18.57	2.56	.85
Total Test	36.71	5.35	.81	38.59	5.03	.86

TABLE 6

Regression of Posttest over Pretest Scores

on Curriculum-Specific Tests

Location	Grade	Student N	Test	B	Beta	Error B	F-ratio
East Palo Alto	3, 4	113	Lesson 1	.45	.38	.10	19.25
			(constant)	6.89			
			Lesson 2	.21	.20	.10	4.63
			(constant)	10.24			
			Lesson 3	.46	.45	.08	28.79
			(constant)	6.87			
			Total	.50	.44	.10	27.07
			(constant)	20.58			
Trenton	3	143	Lesson 1	.61	.58	.07	70.64
			(constant)	8.95			
			Lesson 2	.11	.10	.09	1.37
			(constant)	16.56			
			Total	.51	.47	.08	40.91
			(constant)	20.01			

TABLE 7

Means and Standard Deviations of Adjusted Posttest Scores on Curriculum-Specific Tests (Subtests and Total Test) for Individual Teachers' Classes

Teacher No.	Lesson 1 Mean	SD	Lesson 2 Mean	SD	Lesson 3 Mean	SD	Total Test Mean	SD
East Palo Alto								
1	8.15	2.21	8.30	3.67	11.21	3.37	26.41	8.00
2	10.61	4.75	10.51	4.91	11.80	5.70	31.91	15.90
3	10.32	1.69	13.26	3.30	11.80	1.66	37.11	4.35
4	9.82	2.09	18.15	1.07	13.71	.78	41.13	2.29
5	9.35	3.31	8.18	2.42	10.97	3.98	29.42	7.68
6	8.96	2.04	11.20	4.73	11.08	3.66	31.11	7.34
7	11.50	1.80	13.04	4.23	13.36	5.19	38.00	8.83
8	11.34	1.22	16.49	1.97	13.19	2.36	41.79	4.20
9	9.37	1.72	11.89	1.41	13.82	2.19	36.63	3.58
10	10.36	2.20	10.25	3.70	13.12	1.68	32.91	4.28
11	11.69	2.24	11.78	3.12	11.13	3.02	34.09	6.71
12	10.38	2.14	12.81	5.60	11.75	3.88	35.75	10.7
13	9.91	2.80	11.02	2.34	10.85	2.65	33.20	3.47
Trenton								
14	17.35	4.01	17.47	1.49			35.33	3.45
15	19.97	4.65	15.53	7.76			35.38	12.02
16	21.35	2.61	19.35	0.75			40.93	2.70
17	21.40	2.28	19.07	0.90			40.19	2.31
18	23.70	2.68	19.62	0.45			42.89	2.61
19	17.78	3.60	18.24	1.99			36.02	4.65
20	20.32	2.75	18.62	1.13			38.77	2.20

TABLE 7, (continued)

Means and Standard Deviations of Adjusted Posttest Scores on Curriculum-Specific Tests (Subtests and Total Test) for Individual Teachers' Classes

Teacher No.	Lesson 1		Lesson 2		Lesson 3		Total Test	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
21	18.95	2.90	18.88	0.84			37.39	2.87
22	18.78	3.29	18.10	1.07			36.62	4.35
23	17.90	2.91	18.86	1.48			37.19	3.96
24	21.81	4.19	19.20	1.17			41.41	5.08
25	20.09	2.76	18.77	1.12			38.78	3.37
26	19.81	1.60	19.12	1.73			39.48	3.22
27	20.54	1.99	19.06	0.70			39.56	2.27

6. Relation of the Independent and Dependent Variables

a. Black English Tests for Teachers

In order to establish the relation of the adjusted class posttest scores to teacher performances on the Black English Tests for Teachers (TTBE), correlations between these two variables were calculated. The correlations are shown in Table 8. No significant relation between the two variables is shown for Trenton. In the Ravenswood City School District teacher performance on the TTBE relates significantly to pupil achievement on the total curriculum-specific test-- primarily as a result of a strong relationship between the TTBE scores and pupil achievement on Lesson I subtest (dealing with sequencing skills). Since no particular use of or

reaction to Vernacular Black English was noticed among the teacher behaviors, no strong hypothesis concerning the relation of TTBE scores to pupil achievement can be advanced. Perhaps the most reasonable explanation of the relation is that (a) opportunity to learn about Black English history and structure had been offered by various workshops in the Ravenswood City School District, and (b) the more efficient teachers were also the ones that had taken better advantage of that opportunity.

TABLE 8

Correlation of TTBE Scores with Adjusted Gains on Curriculum-Specific Tests

Location	TTBE Test	Curriculum-Specific Test			
		Lesson I	Lesson 2	Lesson 3	Total Test
East Palo Alto	Section I	.58**	.30	.28	.51*
	Section II	.55*	.39+	.16	.51*
	Total Test	.60**	.34	.24	.53*
Trenton	Section I	.10	.003	-	.13
	Section II	.12	-.08	-	.05
	Total Test	.14	-.04		.13

*p < .05
**p < .01
+p nearly significant at .05

b. Classroom Observation Instrument A

Correlational analysis was also used to examine the relationship of the frequencies of classroom behaviors observed through Instrument A and mean adjusted posttest scores of teachers' classes. The correlations are shown in Tables 9A and 9B. Correlations are given for frequencies of behaviors shown in each lesson and the subtest corresponding to that lesson as well as for the frequency of the behavior across all lessons and the total test score. For the Ravenswood City School District, total test scores are also correlated with frequencies of behaviors shown in the review lesson and with frequencies documented in the three lessons exclusive of the review lesson.

The correlation shown for the Ravenswood City School District also indicates that for the data coming from that district, frequency of behaviors in all lessons (B in Table 9A) may be of especially dubious value as an indicator of successful teaching, because teaching behaviors appear to have different relations to pupil achievement depending on their use in the initial teaching lesson or the review lesson. Thus, X3 (Using visuals) has a strongly positive relation to achievement but only when used in the review lesson. X6 (Modeling) relates positively to achievement when used in the initial teaching lessons, but has a significant negative relation when used in the review lesson. One can only suspect that the use of visuals proved successful for the purpose of the kind of overall summary represented by a review lesson, that a great deal of modeling was useful in the initial presentation but that emphasis on modeling in the review lesson shows that the initial presentation was not too successful. The relations shown by frequencies of behaviors exclusive of the review

lesson to total test scores are the ones in which it seems safest to base some recommendations: For the Ravenswood City School District, these behaviors are modeling (X6) and the quick direct correcting of wrong answers (Co1). Both behaviors seem related to a direct-intensive kind of teaching activity which has also been documented as successful by other researchers dealing with the teaching of reading and language arts (Rosenshine, 1976; Becker, 1977).

TABLE 9A

Correlations of Frequencies of Teaching Behaviors (Observation Instrument A) with Mean Adjusted Posttest Scores (Ravenswood)

	Test Scores			Total Test		
Behavior	Lesson 1	Lesson 2	Lesson 3	A	B	C
X1	-.21	.17	-.36	-.06	-.20	-.25
X2	-.33	-.29	-.32	-.03	-.29	-.41+
X3	.09	.34	.43+	.66**	-.06	-.32
X4	.00	.00	.23	-.35	-.38	-.11
X5	.16	.04	.40+	-.22	.15	.25
X6	-.33	.18	.41+	-.47*	.56**	.66**
X7	.32	.32	.48*	-.52*	.02	.41+
Q1	-.22	.16	.07	.45+	.21	.02
Q2	.33	.17	.30	-.00	.52	.54
R1	-.09	.05	-.06	-.35	-.05	.14
R2	-.29	.42+	.05	.13	.39+	.40+
R3	-.58**	.58*	.38	.49*	.46*	.35
Co1	.26	.24	.20	-.31	.39	.61**
Co2	.02	.39+	.22	.47*	.39+	.33
Co3	-.25	.46*	-.17	-.61**	-.42+	-.34
V1	.14	.08+	-.43+	.06	.25	.29
V2	.20	-.39+	.51*	-.20	.10	.26
V3	-.55*	.08	.49*	.15	-.34	-.38+
D1	-.43+	-.11	-.47+	.12	-.30	-.42+
D2	-.23	.34	-.10	-.54*	-.33	.09
Pa1	.09	.05	-.40+	.17	.29	.19
Pa2	.009	-.09	-.18	.13	.0001	-.07
Pa3	-.03	.13	-.28	.36	.14	.03
Pa4	.16	-.14	.08	.16	.11	.08
Pa5	.29	.00	-.07	.49*	.11	.07
Pe1	-.24	.09	-.15	.49*	.11	.07
Pe2	.00	-.03	-.32	.00	-.005	-.01

Note: A = correlation of frequency in review lesson with total test; B = correlation of frequency in all lessons with total test; C = Correlation of frequency in lessons 1, 2, 3, with total test.

* $p < .05$

** $p < .01$

\+ nearly significant at .05

The relation of teaching behaviors to achievement shown at Ravenswood City School District are not replicated in Trenton (see Table 9B). There are only two behaviors which show a clear relation to pupil achievement: (a) The establishment of an overview at the outset of the lesson (X1)-- in other words, the giving of preorganizers and establishment of instructional set which has been identified as a successful teaching behavior in various studies (see Rosenshine, 1971, Chapter 3); and (b) the use of written exercise (V3)-- which incidentally shows negative relation to achievement in Ravenswood (see Table 9A).

TABLE 9B

Correlations of Frequencies of Teaching Behaviors (Observation Instrument A) with Mean Adjusted Posttest Scores (Trenton)

Behavior	Lesson 1	Lesson 2	Total Test
X1	.66*	.48*	.72**
X2	-.01	.18	.09
X3	.32	-.39+	.01
X4	.18	.14	.21
X5	.30	.14	.28
X6	-.16	.10	-.05
X7	-.27	-.16	-.37+
Q2	.15	.36	.24
Q3	.13	.11	.16
R1	-.27	.10	-.15
R2	.36	.004	.35
R3	-.20	.08	-.20
Co1	-.30	-.28	-.39+
Co2	-.28	-.03	-.25
Co3	-.03	.18	.28
V1	-.50*	-.33	-.41+
V2	-.15	-.09	-.26
V3	.61**	.22	.47*
D1	.06	.18	-.17
D2	.00	.00	.00
Pa1	.00	.00	.00
Pa2	.00	.00	.00
Pa3	.05	.15	.01
Pa4	.21	.26	.41+
Pa5	.00	.00	.00
Pe1	.02	.32	.30
Pe2	.00	.00	.00

* $p > .01$
** $p > .05$
\+ nearly significant at $p = .05$

In order to determine whether or not there are significant nonlinear relationships between pupil achievement and the teaching behaviors observed through Instrument A, the correlational analysis was supplemented by the following procedure: teachers in Trenton and Ravenswood were assigned to high, medium, and low achieving groups according to the mean adjusted posttest scores of their pupils on the total test (groupings for Ravenswood: 4,5,4; groupings for Trenton: 4,6,4). The frequencies of teachers' behaviors shown in all lessons (in Ravenswood also total frequencies exclusive of those counted in the review lesson) were then analyzed by an analysis of variance using the teacher groupings as independent variables, in order to determine whether high, medium, and low achieving teacher groups differed significantly in frequencies of teaching behaviors. Such analysis might have given some indication concerning the existence of nonlinear relationships between teaching behavior and pupil achievement if significantly higher or lower frequencies of certain behaviors had been found in the medium group of teachers. In fact, no indications of such nonlinear relations were found, and the analysis of variance undertaken merely confirmed the existence of the linear relations shown by the correlations in Tables 9A and 9B.

c. Classroom Observation Instrument B

Because of time limitations, Classroom Observation Instrument B was used only to observe the classes of teachers who ranked highest and lowest in terms of pupil achievement on the total curriculum test. The videotapes of the three highest and three lowest ranked teachers from Ravenswood and those of the four highest and four lowest ranked from Trenton were chosen

for observation. Only the lessons taught in both districts (past tense and vowel digraphs) were observed. Frequencies of the three activities of behaviors contained in Instrument B were established for each of the 14 teachers observed for both of the observed lessons (frequencies for lessons not totaling twenty minutes each were adjusted for a twenty-minute period using the same formula that was employed for Observation Instrument A, see 4b, above).

Because of the relatively small number of teachers observed (N=14), a nonparametric alternative was chosen to investigate differences between the high and low ranked teachers. The statistic used was the chi-square approximation of the Kruskal-Wallis test (Roscoe, 1969, pp. 304-306). The Kruskal-Wallis test requires that teachers be ranked from lowest to highest according to frequencies in each category of teaching behavior through the construction of a frequency distribution calculated on the basis of the formula: rank = $cf - \frac{f}{2} + 0.5$. Table 10 shows for each of the 14 teachers (grouped in high and low achieving groups) the adjusted frequency of the three activities observed through Instrument B and the rank orders assigned for the purpose of calculating the chi-square approximation (for details of the calculation, see Roscoe, 1969, pp. 305-306). Rank orders for high and low achieving teachers were determined to differ significantly ($p < .01$) for two of the three activities observed: (a) the lower achieving teachers devoted more of their teaching time to material not directly related or relevant to the lesson, and (b) their teaching was characterized by a larger number of errors and confusing or unclear explanations.

TABLE 10

Adjusted Behavior Frequencies and Comparative Rankings of High and Low Achieving Teachers According to Observation Instrument B

Teacher No.	Behaviors: Directly Relevant Adjusted Frequency	Directly Relevant Rank	Indirectly Relevant Adjusted Frequency	Indirectly Relevant Rank**	Error/Confusion Adjusted Frequency	Error/Confusion Rank**
High Achieving						
8	74	12.5	11	4	1	1.5
7	85	14	1	2	1	1.5
4	74	12.5	0	1	2	3
16	62.35	9	4.70	3	29.41	12
17	24.14	4	11.57	5	2.85	4
24	43.77	6	18.22	7	8.77	5
18	50.66	7	17.33	6	14.66	6
Low Achieving						
6	31.33	5	23	8	16	9
1	71.53	11	25	10.5	21.46	10.5
5	15	1	42.86	13	14.70	7
25	24.10	3	35.57	12	66.26	14
19	65	10	75.00	10.5	27.00	11
22	20	2	53.00	14	43.00	13
14	58	8	24.00	9	15.00	8

**Difference in ranking between High and Low groups: $p < .01$

7. Summary and Conclusion

Perhaps as the result of the mode of classroom observation chosen, this investigation failed to reveal some of the hoped for uses of and reactions toward Vernacular Black English. For one research site (Ravenswood), teacher performance on the Black English Tests for Teachers did relate significantly to pupil achievement. The absence, however, of any observed overt Black English-related behaviors on the part of the teachers suggests that the relationship is an indirect one and probably due to some teacher characteristics influencing both classroom performance and test performance on the part of the teachers.

The classroom Observation Instrument A, used in this study, identified some successful teaching behaviors like modeling, direct correcting, and establishment of an overview. These behaviors correspond to teaching activities that have been identified as successful in various studies of classroom teaching. Their effect, however, was not consistent in both research sites of this investigation.

Classroom Instrument B was applied only in the observation of the teaching performances of the seven most and seven least successful teachers. Of the three classroom activities observed through Instrument B, two distinguished quite clearly these two groups of teachers: the less successful teachers (a) committed more errors and communicated less clearly and (b) devoted more of their teaching time to matters only indirectly related to the lesson.

The results obtained through Instrument B are reminiscent of those achieved by previous application of concepts like "clarity of presentation" (e.g., see Rosenshine, 1971, pp. 100 ff) to classroom research. The rater

judgments required by the instrument appear to be of relatively high inference, but are at the same time of considerable reliability. The high reliability of judgments concerning lack of clarity or error in communication is especially noteworthy, because unlike most instruments appraising clarity of teacher communication, Instrument B did not rely on a rating scale but on a time interval based frequency count.

The relative success of Instrument B compared to the relatively meager results obtained from Instrument A suggest various interpretations and avenues for further research:

1. It may be much easier to identify bad teaching than to decide just what constitutes good teaching. Perhaps too much of the research in teaching (and as a result teacher training) may have focused on various alternate ways of teaching well. To identify just what constitutes bad teaching (and to try to eliminate it) may be a very profitable approach to the improvement of teaching.

2. In the study of teaching, too much emphasis can be put on the how at the expense of what is being taught. The less successful teachers observed in our experiment were distinguished from the more successful not so much through their teaching procedure, but rather through larger amounts of downright errors and the use of instructional time for purposes not directly relevant to the goals of the lesson.

3. We should not be afraid to make qualitative judgments in the study and observation of classroom behaviors. These qualitative judgments (which are also implied in such approaches to classroom research as educational criticism or ethnographic observation) do not necessarily exclude the possibility of quantifying data. Reliable qualitative judgments combined with a quantitative approach allowing measurement of observation may constitute one of the best possible avenues for the identification of the value of different teaching behaviors and the improvement of teaching.

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Appendix A: Code and Category Definitions Used in Observation Instrument A

Code **CATEGORY and Definition**

X EXPLAINING (Kinds of explanations used in the formal presentation of lessons).

1 Gives overview, purpose of lesson.

"Learning about sequencing will help us to write, to understand what we read better, and it can even be useful in arithmetic."

"Everytime we talk or write, we use verbs, and studying about tense is just one part of learning more about communicating."

"This helps us with spelling and reading."

2 Uses examples in explaining lesson.

"For example, numbers like 1,2,3,4 can be in sequence and letters like a,b,c, can be in sequence."

"A question mark is a punctuation mark and so is an exclamation point."

3 Uses visual aids like learning strips, cassettes, projectors, blackboard.

Writing on blackboard, passing out learning strips, posting signs, strips, pictures, etc. Using machinery such as tape recorders, projectors, etc.

4 Uses textbooks or refers students to textbooks to obtain explanation of lesson.

"Look in your books on page 3 and you will see an example of what 'sequence' means."

"The directions for doing this lesson are in the book; Lets read them."

"Look in the textbook; you'll see how to do it."

5 Gives definition of terms, topics used in lesson.

"Well, a verb is part of speech; it's an action word."

"A consonant is a letter of the alphabet that is not a,e,i,o, or u."

6 Models in instructing; explains how something should be done by doing it.

Verbally or physically going over an exercise and completing the tested activity.

Saying words or phrases before calling on objects to do so.

Appendix A, (continued)

7 Directs in instructing, tells objects what to do or how to do it without demonstrating.

"Turn to page 5, read the directions, and then do the exercise."

"Write your name on the head of the paper, read the sentence, and then find the word that you think is a verb there. When you find the verb, write over it past or present tense."

Code	CATEGORY and Definition
Q	QUESTIONING (Kinds of questions and responses to questions used in presentation of lesson).

1 Asks rote question which produces short, routine responses.

"What tense will the verb be in?"

"1,2,3,__; what number fits in that space in a sequence?"

2 Asks probing question that requires students to develop idea, think further, etc.

"Can anyone tell me why sequencing is important if we are to read properly?"

"Who can tell us why we need to use tense when we talk?"

Code	CATEGORY AND Definition
Co	CORRECTING (Kinds of correction behaviors used in presenting lesson).

1 Corrects without explanation; gives simple, terse comment or calls on another student thereby showing that answer is incorrect, but offers no explanation.

"No."

TEACHER: "Sue, what does P-E-T spell?"
SUE: "P-E-T spells PAT."
TEACHER: "Mary, what does P-E-T spell?"

"Wrong."

2 Corrects by questioning, asks question which implies that response is wrong.

"Do you mean, PET?"

"Can you think a bit more on that?"

"Are you sure?"

3 Corrects by giving desired correct response.

Appendix A, (continued)

Code CATEGORY and Definition

V EVALUATING (Kinds of efforts made which show student understands and can perform lesson objective).

1 Checks individual; asks individual student to perform lesson's objective.

"Can you repeat what I just said, John?"

"Give me an example of a sequence."

2 Checks group; asks group to perform lesson's objective.

"All right, class, can you repeat what I just said?"

"Now, all of you call out the answers as I point to the blank space."

"Let's go over this list together."

3 Gives written exercise.

Gives group written exercise to perform.

Code CATEGORY and Definition

R RECOGNITION, PRAISE (Kinds of praise, recognition used in lesson performance).

1 Gives simple, terse acknowledgment of satisfactory performance of lesson.

"Uh-Huh."

"All right."

STUDENT: "A verb is an action word."
TEACHER: "A verb is an action word."

2 Gives elaborated positive acknowledgment of good work.

"That was very good."

"That was a well thought-out definition of sequencing."

"My, I'm proud of you for giving that answer."

3 Makes elaborated negative statement of work.

"Mary, you talk a lot but, when you are supposed to speak, you never have the correct response."

"That is not right, you have got to give a correct answer sometime."

Appendix A, (continued)

Code CATEGORY and Definition

D DISCIPLINE (Kinds of controlling, disciplining actions used to cause a behavior change).

1 Uses mild discipline; uses normal or soft tone and mild language to bring about a behavior change.

"John, will you please sit down."

"Raymond, I don't see you talking back there, do I?"

"I know a nice girl like you wouldn't do a thing like that."

2 Uses harsh discipline control; uses harsher tone and/or harsh language or action to bring about a behavior change and uses negative actions.

"John, sit your little self down."

"You better sit down while you can sit down."

"Don't let me have to hit you."

"You don't know how to act any better."

"Sit down this instant."

Hitting,"thumping".

Code CATEGORY and Definition

Pa PARTICIPATION (Type of group spirit, kinds of values of class).

1 Expresses availability of help.

"I'm right here to help."

"Do you need help?"

"Call on me if you need help."

2 Calls for self-sufficiency, individuality, before asking for or receiving help.

"Try to do it yourself before you ask for help."

"Nobody needs to help me, I can do it myself."

3 Students call out answers, ask to be called on.

"Let me do it."

"We can do it."

"I know, I know."

Appendix A, (continued)

4 Calls for, or places value on group or cooperative effort.

Makes statements or directs activities which show a value on cooperation, sharing, helping others.

"Work together. It's a good idea to share your ideas."

"Now, I want you to do this together. If you finish your work, help your neighbor."

5 Calls for, or places value on individual or competitive effort.

Makes statements or directs activities which show a value for competition working individuality.

"Who will get through first?"

"Do your own work."

"Cover your answer sheet."

Code CATEGORY and Definition

Pe PERSONALIZATION (Types of references, points used in any kind of communication).

1 Makes positive personal references; refers to self or another individual specifically in communication.

"Suzie, you look beautiful today."

"You know which story I liked when I was little?"

"John, you are nice and tall, how many inches tall are you?"

2 Makes positive familial or community references; refers to one's own family, the family of others or other members, institutions, activities within the local community.

"Your mother told me she wanted you to do well in your reading."

"My father used to cook gumbo for us on Friday nights."

"Mr. Jones, who owns the store down the street uses fractions in his work."

"They sing this song at my church, but they have different words."

Appendix B: Definitions and Examples of Categories Used in Observation Instrument B

Errors and/or Confusion

Verbally or visually communicating incorrect information or information which is, if not incorrect, confusing. It was quickly determined that while few outright errors occurred in the teaching behaviors, a type of communication did occur which caused pupil error, misunderstanding, or confusion. Such confusing behaviors often took the form of unclear communications such as the recitation of a rule without showing its relationship to the lesson at hand. For example:

> One teacher asked pupils to distinguish between the pronunciation of ea (ee) and ea (eh) digraphs, and when students gave incorrect pronunciations, the teacher cupped her hands and began reciting, " When the door is open, the vowel is short; when the door is closed, the vowel is long." This rule probably applied to diacritic marks for pronunciation, but no such marks are contained in the word list and no explanation was given for "long" or "short" vowels.
>
> Another teacher, in explaining the concept of verbs, stated that verbs were action words such as run, sit, and play. The teacher then stated, "Well, some are action and some are not action. Run is action and are is not action but is running is action." The teacher then moved to ask pupils to give examples of action and nonaction verbs.

Examples of communicated incorrect information include:

> Under the heading, "ie digraphs", the teacher has listed the words fiesta and either.
>
> The teacher asks students to tell the past tense of the verb take and accepts the word taken as correct.

Appendix B, (continued)

Indirectly Relevant Teaching Behavior

This category refers to teacher behavior that is not focused directly on the concepts being taught but rather on those which are indirectly related or indirectly relevant to the lesson. As an example:

The teacher asks students to talk as they did when they were babies in order to explain the process of language acquisition. The teacher's goal in this activity was to show the relationship of nouns to verbs and then to teach present-past tense contrasts.

Teacher: "What do you think were the first words you spoke, John?"

Student: "Mamma. Bottle."

Teacher: "You started naming things. We call those nouns. Later on, you added other words."

(The teacher eventually leads the pupil to form the sentence, "Give me a bottle" and points out "give" is a verb).

In the lesson on digraphs, the teacher says "Today we are going to do skills, your favorite subject. Let's see how much you can remember from some skills first. Now I know John knows the letters of the alphabet."

John: "Yeah."

Teacher: "What are those letters on the board?"

John: "B's".

Teacher: "What are these called?"

John: "Symbols".

The teacher discussed the meaning of symbols and then described the symbols used for vowel sounds, including digraph sounds.

Directly Relevant Teaching Behavior

This category refers to teacher activity that is focused directly on concepts being taught. This is teaching behavior that bears direct relevance to the lesson. As an example:

Teacher: "Look at the board and tell us which words are verbs."

Student: "Sell, go, jump, cry."

Appendix C: Sample of Criterion Tests

(Tests for Lessons 2 and 3 used in Ravenswood City School District)

SECTION 2

VERB TENSE
(PAST-PRESENT)

I. Circle the verbs in the following 5 sentences. Then, if the verb is in the past tense, write "past" above it. If it is in the present tense, write "present" above it.

Ex: I PAST (saw) Sam yesterday.

1. We had a good time at your party.
2. Our class went to Great America and Marine World for field trips last year.
3. I am two years older than my sister.
4. Our classroom is very neat this year.
5. Martin Luther King was a great Black leader.

II. Circle the right tense of the verb in the following 5 sentences.

6. She leaves / left her book on her desk yesterday.
7. The plane landed / lands at 3 o'clock today.
8. Last night Dan and I watched / watch T.V.
9. I help / helped my teacher do the lesson last monday.
10. Debbie won / wins the spelling Bee last week.

Appendix C, (continued)

III. Fill in the right tense of the verb to be.

Example: They were in the house. (past)

11. We _____ very tired. (past)
12. The cookies _____ on the table. (present)
13. I _____ very glad to see you. (present)
14. Sandra _____ the star of the show. (past)
15. They _____ sad when it started to rain. (past)

SECTION 3

EA-IE DOUBLE VOWEL PATTERN

Complete the words in the boxes on the right hand side of your paper by filling in either ea or ie. The word in the box must fit into the sentence.

Example: I will clean my room after school | clean |

1. Ray did not belong to the baseball _____. | t__m |
2. For dessert I had some _____. | p__ |
3. The bird had a sharp _____. | b__k |
4. I have a picture of an Indian _____. | ch__f |
5. He wore a big hat on his _____. | h__d |

Appendix C, (continued)

6. The plants will _____ if they are not watered. d__

7. We had _____ chicken for dinner. fr__d

8. If something is not light, it is _____. h__vy

9. The grass area the football players play on is called the football _____. f__ld

10. It is fun to _____ books. r__d

11. _____ help me find my lost dog. pl__se

12. My shoes are _____. unt__d

13. She will _____ me how to play the piano, t__ch

14. The green_____ of the plant fell off. l__f

15. The baby _____ when his mother put him down. cr__d